

WHAT IS CLAIMED IS:

1. An IC card for receiving a power supply or a radio wave from an upper apparatus so as to operate an internal IC chip, comprising:

5 a memory element capable of being used as a program memory and a work memory, said memory element for storing electric charges in a capacitor, wherein

when a power supply is broken during a writing process so as to not to be supplied inside, the electric charges stored
10 in the capacitor in said memory element are used so that a voltage for time required for completing a unit writing cycle is secured, and the current writing process is continued without interruption, and at a stage that the unit writing cycle is completed, the process is ended.

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2. The IC card according to claim 1, wherein said memory element is a non-volatile memory having a structure that the voltage for the time required for completing the writing process can be secured.

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3. The IC card according to claim 1, further comprising:
a power-supply monitor circuit which monitors a voltage level of a power supply, wherein

a judgment is made as to whether the current voltage level
25 of the power supply is in an operating area showing an operable

voltage range, in an operation-forbidden area showing an operation-forbidden voltage range, or in an operation waiting area showing an operation waiting voltage range,

when the voltage level is changed from the operating area
5 into the operation waiting area, the on-executing process is brought into the waiting state without ending the process,

when the voltage level is changed from the operation waiting area into the operation-forbidden area, the operation is ended, and

10 when the voltage level is changed from the operation waiting area into the operating area, the process in a waiting state is restarted.

4. An IC chip for receiving a power supply or a radio wave
15 from an upper apparatus so as to be operated, comprising:

a memory element capable of being used as a program memory and a work memory, said memory element for storing electric charges in a capacitor, wherein

when a power supply is broken during a writing process
20 so as to not to be supplied inside, the electric charges stored in the capacitor in said memory element are used so that a voltage for time required for completing a unit writing cycle is secured, and the current writing process is continued without interruption, and at a stage that the unit writing cycle
25 is completed, the process is ended.

5. The IC chip according to claim 4, wherein said memory element is a non-volatile memory having a structure that the voltage for the time required for completing the writing process can be secured.

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6. The IC chip according to claim 4, further comprising:
a power-supply monitor circuit for monitoring a voltage level of a power supply, wherein

a judgment is made as to whether the current voltage level
10 of the power supply is in an operating area showing an operable voltage range, in an operation-forbidden area showing an operation-forbidden voltage range, or in an operation waiting area showing an operation waiting voltage range,

when the voltage level is changed from the operating area
15 into the operation waiting area, the on-executing process is brought into the waiting state without ending the process,

when the voltage level is changed from the operation waiting area into the operation-forbidden area, the operation is ended, and

20 when the voltage level is changed from the operation waiting area into the operating area, the process in a waiting state is restarted.

7. A data assuring method, wherein when a power supply is broken during a writing process so as not to be supplied into an IC card, electric charges stored in a capacitor in a memory element usable as a program memory and a work memory are used so that a voltage for time required for completing a unit writing cycle is secured, and the current writing process is continued without interruption, and at a stage that the unit writing cycle is completed, the process is ended.

10 8. A power-supply monitor method, comprising the steps of:
monitoring a voltage level of a power supply so as to make a judgment as to whether or not the voltage level is in an operating area showing an operable voltage range, in an operation-forbidden area showing an operation-forbidden voltage range or in an operation waiting area showing an operation waiting voltage range;

when the voltage level is changed from the operating area into the operation waiting area, bringing the on-executing process into the waiting state without ending the process;

20 when the voltage level is changed from the operation waiting area into the operation-forbidden area, ending the process; and

when the voltage level is changed from the operation waiting area into the operating area, restarting the process in a waiting state.

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